GNUCHEVA, VERA FEDOROVNA

GNUCHEVA, VERA FEDOROVNA. Materialy dlia istorii ekspeditsii Akademii Nauk v XVIII i XIX vekakh; khronologicheskie obzory i opisanie arkhivnykh materialov, pod obshchei red. L.S. Berga [i dr.] Moskva, AN SSSR, 1940. 310 p. (Akademiia Nauk Soiuza Sovetskikh Sotsialisticheskikh Respublik. Trudy Arkhiva, no. 4) DLC AS262.A6135 no.4 MnU NN

SO: LC, Soviet Geography, Part I, 1951, Uncl.

GYUCHEVA, Vera Fedorovna

GYUCHEVA, Vera Fedorovna. Geograficheskii departament Akademii Nauk XVIII veka; pod. red. A.I. Andreeva. Moskva, AN SSSR, 1946. 445 p. (Akademiia Nauk. Arkhiv. Trudy, no. 6)
"Materialy i dokumenty": p. [101] - 233.
Bibliographical footnotes.

DLC: AS262.A6135 no. 6 also G23.A37

SO: LC, Soviet Geography, Part I, 1951; Uncl.

GMUCHEVA, Vera Vladimirovna; VOLOSHIN, D.A., red.

[Bibliography of Soviet medical bibliography, 1917-1957] Bibliografiia sovetskoi meditsinskoi bibliografii, 1917-1957 gg. Pod red. D.A. Voloshina. Leningrad, 1953. 118 p. (MIRA 12:2)
(BIBLIOGRAPHY--MEDICINE)

GNUCHEVA, Vera Vladimirovna, comp.

Check-row and checkrow-hill methods of cultivating agricultural crops; recommended reading list Leningrad, 1954. 17 p.

GNUCHEVA, V.V.

Preduprezhdenie i lechenie boleznei sel'skokhoziaistvennykh zhivotnykh (Prevention and therapy of diseases in farm animals). Rekomend. ukazatel' literatury. Leningrad, 1954. 28 p. (Gos. ordena Trudovogo Krasnogo Znameni publichnaia b-ka im. M.E. Saltykova-Shchedrina)

SO: Monthly List of Russian Accessions, Vol 7, No 9, Dec 1954

GNUCHEVA, Vera Vladimirovna; SMIRNOV, V.S., redaktor

[Raising young farm animals and poultry; a bibliography] Vyrashchivanie molodnyaka sel'skokhozyaystvennykh zhivotnykh i ptitsy; rekomendatel'nyi ukazatel' literatury. Leningrad, 1956. 18 p. (MIRA 9:9)

1. Leningrad. Publichnaya biblioteka.
(Bibliography--Poultry)
(Bibliography--Stock and stockbreeding)

GNUCHEVA, Vera Vladimirovna; SMIRNOV, V.S., redaktor

[Vegetable gardening; a recommended reading list] Ovoshchevodstvo; rekomendatel'nyi ukazatel' literatury. Izd. 2-oe. Leningrad, 1956. 31 p. (MLRA 10:3)

1. Leningrad. Publichnaia biblioteka
(Bibliography--Vegetable gardening)

GNUCHEVA, Vera Vladimirovna; ABRAMOVA, Zh.I., kandidat meditsinskikh nauk, redaktor

[How to keep healthy; a bibliography of scientific and popular medical literature] Kak sokhranit' zdorov'e; rekomendatel'nyi ukazatel' nauchno-populiarnoi meditsinskoi literatury. Leningrad, 1956. 53 p. (MLRA9:7)

1. Leningrad, Publichnaya biblioteka.
(BIBLIOGRAPHY--MEDICINE)

BRONSHTEYN, Mikhalina Petrovna; GNUCHEVA, Vera Vladimirovna; FUKS, Ye.A., redaktor; ROZEN, E.A., tekhnicheskiy redaktor

[Bibliography of literature on the natural sciences; a textbook for students of library schools] Bibliografiia estestvennonauchnoi literatury; uchebnoe posobie dlia studentov bibliotechnykh institutov. Moskva, Gos. izd-vo kul'turno-prosvetit. lit-ry, 1956. 182 p. (MLRA 10:3)
(Bibliography--Science)

GNUCHEVA, V.V.; VOLOSHIN, D.A., redaktor

[Guide to foreign bibliographies of medical literature (1945-1956)] Putevoditel' po inostrannoi bibliografii meditsinskoi literatury (1945-1956 gg.). Pod red. D.A.Voloshina. Leningrad, Gos.publichnaia biblioteka im. M.E.Saltykova-Shchedrina, 1957. 108 p. (MLRA 10:7)
(BIBLIOGRAPHY--MEDICINE)

GNUCHEVA, V V

PHASE I BOOK EXPLOITATION SOV/4002

Leningrad. Publichnaya biblioteka imeni M. Ye. Saltykova-Shchedrina

Leninskiye premii 1959 goda v oblasti yestestvoznaniya i tekhniki; rekomendatel'nyy ukazatel' literatury (Lenin Prizes in the Field of Natural Science and Technology for 1959; Index of Recommended Literature) Leningrad, 1959. 46 p. 15,650 copies printed.

Additional Sponsoring Agency: RSFSR. Ministerstvo kul'tury.

Compilers: Valentina Karpovna Stepanova and Vera Vladimirovna Gnucheva; Ed.: N. Ya. Morachevskiy; Scientific Ed.: L. Ya. Popilov.

PURPOSE: This booklet is intended for those interested in Soviet scientific and technical achievements.

COVERAGE: The booklet lists persons and groups of persons to whom Lenin prizes were granted for accomplishments in various branches of science and engineering. Each entry contains information on the achievement of the prize winner or winners and a bibliography of related popular scientific literature. In a number of cases books and articles on the fundamentals of the problems dealt with in respective entries are listed.

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Lenin Prizes (Cont.) SOV/4002

TABLE OF CONTENTS:

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Lenin Prizes (Cont.)

17(1,5) PHASE I BOOK EXPLOITATION SOV/2027

Gnucheva, Vera Vladimirovna

Bibliografiya sovetskoy meditsinskoy bibliografii, 1917-1957 gg. (Bibliography of Soviet Medical Bibliography, 1917-1957) Leningrad, 1958. 118 p. 1,500 copies printed.

Sponsoring Agency: Leningrad. Gosudarstvennaya publichnaya biblioteka imeni M. Ye. Saltykova-Shchedrina.

Ed.: D. A. Voloshin.

PURPOSE: This bibliography of Soviet medical bibliographies is to assist doctors and medical library workers in searching medical literature and to survey the state of Soviet medical bibliography.

Card 1/4

Card 3/4

STEPANOVA, Valentina Karpovna; GNUCHEVA, Vera Vladimirovna; POPILOV, L.Ya., nauchnyy red.; MORACHEVSKIY, N.Ya., red.

[Lenin Prizes for 1959 in the natural sciences and technology; a bibliography] Leninskie premii 1959 goda v oblasti estestvoznaniia i tekhniki; rekomendatel'nyi ukazatel' literatury. Pod nauchnoi red. L.IA. Popilova. Leningrad, Gos.publichnaia biblioteka im. M.E.Saltykova-Shchedrina, 1959. 46 p.
(MIRA 13:6)

(Bibliography--Technology) (Lenin Prizes)

GRIGOR', S.M.; MALYGINA, I.G.

Some problems of technology of preparing water for large-scale production of cultural virus vaccines. Vop. virus. 10 no.5:614-618 S-O '65. (MIRA 18:11)

1. Institut poliomiyelita i virusnykh entsefalitov AMN SSSR, Moskva.

L 33086-66 EWT(1)/T JK
ACC NR: AP6024120 (N) SOURCE CODE: UR/0402/66/000/001/0096/0099

AUTHOR: Gnuni, G. M.; Dzagurov, S. G.; Kamonenko, L. L.; Mironova, A. 29 B

ORG: Institute of Poliomyelitis and Viral Encephalitides, AMN SSSR, Moscow (Institut poliomielita i virusnykh entsefalitov AMN SSSR)

TITLE: Method of growing tissue cultures and viruses in revolving vessels

SOURCE: Voprosy virusologii, no. 1, 1966, 96-99

TOPIC TAGS: virology, tissue physiology, medical laboratory instrument, histology

ABSTRACT: The ordinary method of growing monolayer cultures of trypsinized cells leaves some 60 to 70% of the available area of the vessel unused, thus reducing the possibility of obtaining a large quantity of the cell mass participating in the formation of virus particles. The authors designed an apparatus in which flasks or bottles with a suspension of monkey kidney cells or human diploid cells in a culture medium revolve at the rate of 20 revolutions per hour. They found that the rotation of the vessels had no effect on adherence of the cells to the surface or on their growth. The mean index of proliferation (ratio of number of cells grown to the number inoculated) was about 1, the norm for the given types of tissue. There was a marked increase in the useful area occupied by the monolayer, decrease in consumption of the culture medium, and greater concentration of poliomyelitis virus (human diploid cells). Orig. art. has: 1 figure and 5 tables. [JPRS]

SUB CODE: 06 / SUBM DATE: 07Jun65 / ORIG REF: 004 / OTH REF: 005

Card 1/1 BK UDC: 576.858.093.1+578.085.23

0915 1696

S/022/60/013/01/01/010
C 111/ C 333

AUTHOR: Gnuni, V. Ts.

TITLE: On the Theory of Dynamic Stability of Laminated Anisotropic Flat Shells

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-matematicheskikh nauk, 1960, Vol. 13, No. 1, pp. 47-58

TEXT: The author considers flat shells which consist of an odd number of homogeneous orthotropic layers symmetrically arranged with respect to the central surface. The author investigates the dynamic stability. With strong reference to the nonlinear theory of V. V. Bolotin (Ref.1) it is assumed that the momentless and the undeformed state are identical. However, the author takes into consideration a weak nonlinearity and constructs a solution for which the energy of the system, averaged over a period, is constant. The unbounded increase of the amplitudes in the unstable domains resulting from the linear theory is avoided; the author calculates the amplitude of the phugoid motion occurring in reality. Because of the aforementioned constancy of the energy this amplitude does not depend on the nonlinearity so that jump phenomena

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S/022/60/013/01/01/010
C 111/ C 333

On the Theory of Dynamic Stability of Laminated Anisotropic Flat Shells

are not reproduced.

The author thanks Professor S. A. Ambartsumyan for the subject and guidance.

/B

There are 1 figure, and 11 references: 10 Soviet and 1 American.

ASSOCIATION: Institut matematiki i mekhaniki AN Armyanskoy SSR
(Institute of Mathematics and Mechanics AS Armyanskaya SSR)

SUBMITTED: October 2, 1959

Card 2/2

10 0000 2807

11,2312 also 3115,2807

S/022/60/013/005/003/008
C111/C222

AUTHORS: Bagdasaryan, Zh.Ye., and Gnuni, V.Ts.

TITLE: On the Theory of the Dynamic Stability of Laminated Anisotropic Shells of Revolution

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-matematicheskikh nauk, 1960, Vol. 13, No. 5, pp. 27 - 36

TEXT: The authors consider the axialsymmetric problem of the nonlinear dynamic stability of a laminated orthotropic flat shell of revolution with a closed cupola (fig. 1). The shell consists of an odd number of homogeneous orthotropic layers lying symmetrical with respect to the middle surface of the shell. One of the planes of the elastical symmetry of each layer is parallel to the middle surface, the two others are perpendicular to the meridian surfaces and parallel circles. It is assumed that the Kirchhoff- Love's hypothesis is correct for the totality of the shell.

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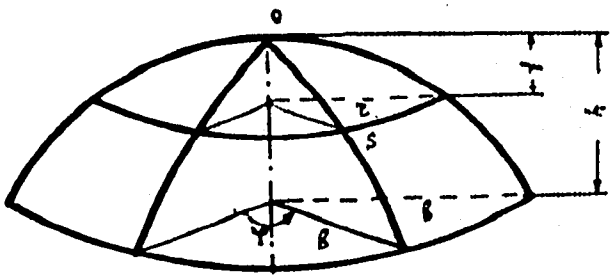
C111/C222

On the Theory of the Dynamic Stability of Laminated Anisotropic Shells of Revolution

Fig. 1.



Фиг. 1.

The authors obtain the equations of the dynamic stability

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On the Theory of the Dynamic Stability of Laminated Anisotropic Shells of Revolution

$$a_{11}r^2\frac{\partial^2\varphi}{\partial r^2}+a_{11}r\frac{\partial\varphi}{\partial r}-a_{22}\varphi-r\frac{\partial f}{\partial r}\frac{\partial w}{\partial r}-\frac{r}{2}\left(\frac{\partial w}{\partial r}\right)^2=0,$$

$$D_{11}r\frac{\partial^3 w}{\partial r^3}+D_{11}\frac{\partial^2 w}{\partial r^2}-D_{22}\frac{1}{r}\frac{\partial w}{\partial r}+\frac{\partial}{\partial r}(w+f)\cdot\varphi+ \qquad (1.13)$$

(1.13)

$$+\int_0^r\left(m^*\frac{\partial^2 w}{\partial t^2}+T_1^0\frac{\partial^2 w}{\partial r^2}+T_2^0\frac{1}{r}\frac{\partial w}{\partial r}\right)rdr=0.$$

where

$$a_{11}=\frac{C_{11}}{\Omega},\quad a_{22}=\frac{C_{22}}{\Omega},\quad \Omega=C_{11}C_{22}-C_{12}^2$$

(1.6)

$$C_{jk}=2\left[B_{jk}^{n+1}\delta_{n+1}+\sum_{i=1}^{n}B_{jk}^{i}(\delta_i-\delta_{i+1})\right],$$

$$D_{jk}=\frac{2}{3}\left[B_{jk}^{n+1}\delta_{n+1}^3+\sum_{i=1}^{n}B_{jk}^{i}(\delta_i^3-\delta_{i+1}^3)\right],$$

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On the Theory of the Dynamic Stability of Laminated Anisotropic Shells of Revolution

$$B_{11}^i = \frac{E_1^i}{1 - \mu_1^i \mu_2^i}, \quad B_{22}^i = \frac{E_2^i}{1 - \mu_1^i \mu_2^i},$$

(1.7)

$$B_{12}^i = \frac{\mu_1^i E_2^i}{1 - \mu_1^i \mu_2^i} = \frac{\mu_2^i E_1^i}{1 - \mu_1^i \mu_2^i}, \quad B_{66}^i = G_{12}^i$$

(1.4) $$m^* = \frac{2}{g}\left[\gamma_{n+1}\delta_{n+1} + \sum_{i=1}^{n} \gamma_i(\delta_i - \delta_{i+1})\right].$$

Here γ_i is the specific weight of the i-th layer, δ_i is the distance of the i-th layer from the middle surface of the shell; furthermore according to (Ref. 5), instead of the external charge P acting normally to the middle surface, the authors substitute the expression

On the Theory of the Dynamic Stability of Laminated Anisotropic Shells of Revolution

(1.12) $$- T_1^o \frac{\partial^2 w}{\partial r^2} - T_2^o \frac{1}{r} \frac{\partial w}{\partial r} \quad .$$

φ is determined from the first equation (1.13) under consideration of the clamping conditions; then the second equation is solved according to the method of Bubnov - Galerkin. The calculation is carried out for a flat spherical shell, where according to (Ref. 3) it holds

(3.1) $$f(r) = h\left(\frac{r}{b}\right)^2 \quad ,$$

and for a conic shell with

(4.1) $$f(r) = \frac{h}{b} r \quad .$$

Here it is assumed that $p = p_o + p_t \cos \Theta t$. In the spherical case, for the nonlinear eigenfrequency ω_n and the kinetic pressure p_{kr}^n the authors give the values

On the Theory of the Dynamic Stability of Laminated Anisotropic Shells of Revolution

(3.9) $$\omega_n^2 = \omega^2 + lW_o + dW_o^2$$

(3.10) $$p_{kr}^n = p_{kr}\left(1 + \frac{1}{\omega^2} W_o + \frac{d}{\omega^2} W_o^2\right)$$

where ω is the linear eigenfrequency, p_{kr} is the critical pressure for a static action, l and d are constants depending on the clamping conditions, while for $W_o = \frac{1}{b^4} w(0,t)$ a nonlinear equation of second order with with variable coefficients is given. In the case of resonant vibrations it holds

(5.4) $$W_o = C \cdot \cos\left[\left(\Omega + \frac{\varepsilon}{2}\right)t + \gamma\right],$$

where C is the amplitude, γ is the phase shift.

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C111/C222

On the Theory of the Dynamic Stability of Laminated Anisotropic Shells of Revolution

There are 2 figures and 6 Soviet references.

[Abstracter's note : (Ref. 5) concerns V.V. Bolotin, Dynamic Stability of Elastic Systems, 1956]

ASSOCIATION: Institut matematiki i mekhaniki AN Armyanskoy SSR (Institute of Mathematics and Mechanics of the Academy of Sciences Armyanskaya SSR)

SUBMITTED: April 7, 1960

Card 7/7

28970
S/179/61/000/003/012/016
E081/E435

10.6000 1327

AUTHORS: Ambartsumyan, S.A. and Gnuni, V.Ts. (Yerevan)

TITLE: Forced vibrations and dynamic stability of 3-ply orthotropic plates

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1961, No.3, pp.117-123

TEXT: The paper is a continuation of previous work (Ref.6: Ambartsumyan S.A. PMM, 1960, Vol.XXIV, No.2; Ref.11: Gnuni V.Ts. Izv. AN Arm.SSR, ser. fiz.-mat. nauk, 1960, Vol.XIII, No.1; Ref.14: Ambartsumyan, S.A., Khachatryan A.A. Izv. AN SSSR, OTN, Mekhanika i mashinostroyeniye, 1960, No.1; Ref.16: Ambartsumyan S.A. Theory of anisotropic shells. Fizmatgiz 1961). The material in each layer of the plate obeys the generalized Hooke's law and has three orthogonal planes of elastic symmetry at each point, with principal directions α, β, γ, the γ direction coinciding with the thickness of the plate. The following assumptions are made: 1. The hypothesis of undeformed normals applies to the external (bearing) layers. 2. For the internal layer: a) the shear stresses $\tau_{\alpha\gamma}$ and $\tau_{\beta\gamma}$ have the form

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Forced vibrations and dynamic ...

$$\tau_{\alpha\gamma} = f(\gamma)\varphi(\alpha,\beta), \qquad \tau_{\beta\gamma} = f(\gamma)\psi(\alpha,\beta) \tag{1.1}$$

where $\varphi(\alpha,\beta)$ and $\psi(\alpha,\beta)$ are functions to be determined and $f(\gamma)$ is a function characterizing the law of change of shear stresses through the thickness, subject to the condition $f(\pm h/2) = 0$;
b) the normal stress σ_γ on planes parallel to the middle surface can be neglected in comparison with the other stresses;
c) the normal displacement is invariant with thickness.
3. The normal displacements are comparable with the thickness, and only those non linear terms arising from the normal displacements are retained in the expressions for the deformation of the middle surface. On the basis of these assumptions, the differential equations governing the deflection and stress functions of the plate are stated. The deflection and stress functions for a plate simply supported at the edges and subjected to compressive stresses P_1, P_2 in its plane are assumed to be double infinite trigonometric series and expressions are obtained for the frequency of vibration and the critical values of the stresses P_1 and P_2. The dynamic

stability of the system and the shape of the resonance curve are also discussed. Special cases of the equations are discussed and the equations are illustrated by numerical examples. There are 6 figures, 1 table and 18 references: 17 Soviet and 1 non-Soviet. The reference to an English language publication reads as follows: Reissner E. Small Bending and Stretching of Sandwich-Type Shells. NACA Report, 1950, 975.

ASSOCIATION: Institut matematiki i mekhaniki AN ArmSSR
(Institute of Mathematics and Mechanics AS ArmSSR)

SUBMITTED: February 28, 1961

GNUNI, V.TS. (Yerevan)

Theory of the nonlinearity of the dynamic stability of shells.
Izv. AN SSSR. Otd.tekh.nauk.Mekh.i mashinostr. no.4:181-182 Jl-Ag '61. (MIRA 14:8)
(Elastic plates and shells)

89484

S/022/61/014/001/004/010
B112/B202

10.9100
16.7300

AUTHORS: Bagdasaryan, Sh. Ye., Gnuni, V. Ts.

TITLE: Resonance in forced nonlinear vibration of layered anisotropic shells

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-matematicheskikh nauk, v. 14, no. 1, 1961, 41-49

TEXT: The authors study forced vibrations of elastic shells consisting of an odd number of layers. The layers are orthotropic and symmetrical with respect to the central layer of the shell. The elastic structure of the individual layers is widely similar to their geometrical structure. Two classes of shells are distinguished: shells with different families of curvature lines and shells with two equal families of curvature lines, i.e., axially symmetrical shells. On the basis of the hypothesis by Kirchhoff-Lyav a nonlinear differential equation of the form

$f'' + 2\lambda f' + \omega^2 f - lf^2 + df^3 = q \cos\vartheta t$ is derived as vibration equation

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for both cases. The coefficients ω, l, d are determined by the elastic and geometrical moduli of the shell and are explicitly given for conic shells and spherical shells. The damping coefficient λ and the disturbance q are arbitrary. In the resonance case ($\vartheta = \omega + \varepsilon$) the following relation was obtained for the amplitude factor b:

$b^2\left[(\varepsilon - \varkappa b^2)^2 + \lambda^2\right] = \frac{q^2}{4\omega^2}$ with $\varkappa = \frac{3d}{8\omega} - \frac{5l^2}{12\omega^2}$. The boundaries of the resonance frequency domain are determined by the condition $\frac{db}{d\varepsilon} = \infty$ or by its equivalent condition $\varepsilon^2 - 4\varkappa b^2\varepsilon + 3\varkappa^2 b^4 + \lambda^2 = 0$. Although the nonlinearity of the vibration does not influence the maximum value $b_{max} = \frac{q}{2\omega\lambda}$ of the amplitude factor, it gives rise to a series of resonance types characterized by $\vartheta = \frac{\omega}{2} + \varepsilon$, or $\vartheta = 2\omega + \varepsilon$; they are discussed at the end of this paper. There are 5 figures and 9 Soviet-bloc references.

Card 2/3

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Resonance in forced nonlinear...

S/022/61/014/001/004/010
B112/B202

ASSOCIATION: Institut matematiki i mekhaniki AN Armyanskoy SSR
(Institute of Mathematics and Mechanics AS Armyanskaya SSR)

SUBMITTED: May 20, 1960

Card 3/3

(Author, etc.)

BOROVSKIY, P. V.

PHASE I BOOK EXPLOITATION SOV/6206 25

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konferentsii po teorii plastin i obolochek, 24-29 oktyabrya 1960. (Transactions of the Conference on the Theory of Plates and Shells Held in Kazan', 24 to 29 October 1960). Kazan', [Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary; N. A. Alumyae, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev, A. L. Gol'denveyzer, N. A. Kil'chevskiy, M. S. Kornishin, A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy, R. G. Surkin, and A. P. Filippov. Ed.: V. I. Alekseagin; Tech. Ed.: Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and engineers who are interested in the analysis of strength and stability of shells.

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Transactions of the Conference (Cont.) SOV/6206

COVERAGE: The book is a collection of articles delivered at the Conference on Plates and Shells held in Kazan' from 24 to 29 October 1960. The articles deal with the mathematical theory of plates and shells and its application to the solution, in both linear and nonlinear formulations, of problems of bending, static and dynamic stability, and vibration of regular and sandwich plates and shells of various shapes under various loadings in the elastic and plastic regions. Analysis is made of the behavior of plates and shells in fluids, and the effect of creep of the material is considered. A number of papers discuss problems associated with the development of effective mathematical methods for solving problems in the theory of shells. Some of the reports propose algorithms for the solution of problems with the aid of electronic computers. A total of one hundred reports and notes were presented and discussed during the conference. The reports are arranged alphabetically (Russian) by the author's name.

Card 2/14

26133
S/040/61/025/004/014/021
D274/D306

24,4200 1327, also 2607, 2807

AUTHORS: Ambartsumyan, S.A. and Gnuni, V. Ts. (Yerevan)

TITLE: On the dynamic stability of nonlinear-elastic sandwich plates

PERIODICAL: Prikladnaya matematika i mekhanika, v. 25, no. 4, 1961, 746-750

TEXT: The plate is referred to an orthogonal coordinate-system α, β, γ so that the middle surface coincides with the $\alpha\beta$ -plane. Certain assumptions are made with regard to stress and strain tensors. The equations for the normal displacement w are set up. Further, the dynamic stability equation is obtained. The solution of this equation is sought in the form

$$w = f(t)\, X(\alpha)\, Y(\beta) \qquad (2.3)$$

where f is the sought-for function and X and Y are chosen so as to satisfy the boundary conditions. Using the Bubnov-Galerkin method, a nonlinear differential equation for f is obtained. Under certain assumptions and taking into account linear damping, this equation

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On the dynamic stability...

reduces to $$f'' + 2\varepsilon_* f' + \Omega_*^2 (1 - 2\mu \cos \theta t) f + V(f, f', t) = 0 \quad (3.4)$$

where $$\Omega_* = \Omega \frac{\theta}{\theta_*}, \quad \varepsilon_* = \varepsilon \frac{\theta}{\theta_*} \quad (3.5)$$

$$V(f,f',t) = 2(\varepsilon - \varepsilon_*) f' + (\Omega^2 - \Omega_*^2)(1 - 2\mu \cos \theta t) f - \alpha_1 |f|^{m_1 - 1} f - \alpha_2 |f|^{m_2 - 1} f$$

The critical frequency θ_* is determined by the assumption that the initial unperturbed state is not deformed. Thus, e.g., at the boundaries of the principal region of instability:

$$\theta_*^2 \approx 4\Omega^2 \left(1 \mp \sqrt{\mu^2 - \frac{4\varepsilon^2}{\Omega^2}}\right) \quad (3.6)$$

For $\theta = \theta_*$, the linear part of Eq. (3.4) allows periodic solutions, which are given by the following estimates

$$\varphi_1(t) \approx \cos\left(\frac{\theta t}{2} - \sigma\right), \quad \varphi_2(t) \approx \sin\left(\frac{\theta t}{2} - \sigma\right) \quad \sigma \approx \tfrac{1}{2} \arcsin \frac{\theta^3 \varepsilon_*}{4\mu\Omega_*^2} \quad (3.7)$$

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S/040/61/025/004/014/021
D274/D306

On the dynamic stability...

By means of L.I. Mandel'shtam's method, the amplitude C of the steady-state oscillations at the boundaries of the principal instability-region can be determined in the zeroth approximation from

$$\int_0^{2T} V[C\varphi_i(t), C\varphi_i'(t), t]\,\varphi_i(t)\,dt = 0 \qquad (3.8)$$

Whence the nonlinear algebraic equation

$$A_1 C^m + A_2 C^m = (\Omega^2 - \Omega_*^2)(1 \mp \mu\cos 2\sigma)\,C \qquad (3.9)$$

where

$$A_i = \frac{i\theta}{2\pi}\int_0^{2T}\left|\cos^{m_i+1}\left(\frac{\theta t}{2} - \sigma\right)\right|dt, \text{ or } A_i = \frac{\alpha_i\theta}{2\pi}\int_0^{2T}\left|\sin^{m_i+1}\left(\frac{\theta t}{2} - \sigma\right)\right|dt \qquad (3.10)$$

It is shown that the negative sign in the right-hand side of (3.9) refers to the lower-, and the positive sign to the upper boundary of the region of instability. It is also shown that the coefficients A_i vanish if the corresponding layer of the plate is made of linear-

Card 3/4

On the dynamic stability...

elastic material. Fig. 5 shows an amplitude vs. frequency plot of steady-state oscillations in the principal instability region, when $A_j \geq 0$. Fig. 4 shows such a graph for $A_j \leq 0$. If the two coefficients A_1 and A_2 are of opposite sign, the corresponding two terms of (3.9) will have opposite effects on the frequency of oscillations. 2 examples are given for illustration of Eq. (3.9). There are 7 figures and 5 references: 4 Soviet-bloc and 1 non-Soviet-bloc. The reference to the English-language publication reads as follows: W. Prager, On ideal locking materials. Transactions of the Society of Rheology. 1957, 1.

ASSOCIATION: Institut matematiki i mekhaniki AN ASSR (Institute of Mathematics and Mechanics AS ArmSSR)

SUBMITTED: April 22, 1961

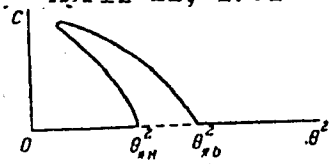

Fig. 4

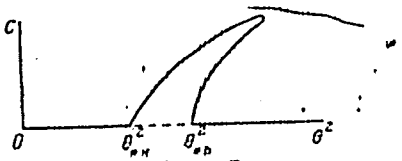

Fig. 5

Card 4/4

S/879/62/000/000/039/088
D234/D308

AUTHORS: Ambartsumyan, S. A., Bagdasaryan, Zh. Ye. and Gnuni, V. Ts. (Yerevan)

TITLE: Some dynamical problems of anisotropic three-layer shells

SOURCE: Teoriya plastin i obolochek; trudy II Vsesoyuznoy konferentsii, L'vov, 15-21 sentyabrya 1961 g. Kiev, Izd-vo AN USSR, 1962, 254-259

TEXT: The authors consider a thin shell whose layers are uniform, orthotropic and symmetrical with respect to the middle surface. The material of each layer obeys the generalized Hooke's law. Normal displacements are assumed to be comparable with the thickness and not to vary along the thickness. The complete system of differential equations in terms of 5 unknown functions is formulated; it is essentially simplified if the effect of normal stress is neglected. This system can be applied to problems of nonlinear dynamical stability or aeroelasticity if appropriate substitutions are made.

Card 1/1

10.7500

37852
S/022/62/015/003/001/008
D234/D308

AUTHOR: Gnuni, V.Ts.

TITLE: Parametrically excited vibration of laminated anisotropic flexible shells

PERIODICAL: Akademiya nauk Armyanskoy SSR. Izvestiya v. 15, no. 3, 1962, 29-36

TEXT: General equations of dynamic stability of a shell consisting of any number of layers is deduced, the tangential components of inertial forces being neglected. The equations are solved for the case of a shell rectangular in plan and radially supported at its edges. An approximate expression for parametrically excited vibrations is deduced and discussed.

ASSOCIATION: Institut matematiki i mekhaniki AN Armyanskoy SSR (Institute of mathematics and mechanics, AS Armenian SSR)

SUBMITTED: January 27, 1962

Card 1/1

BAGDASARYAN, Zh.Ye.; GNUNI, V. Ts. (Yerevan)

"Some problems of dynamics of anisotropic - non-orthotropis - plates and shells"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964

L 29541-65 EWI(l)/EPF(n)-2 Pu-4 WW

ACCESSION NR: AP5005179 S/0179/64/000/006/0117/0119

AUTHORS: Ambartsumyan, S. A. (Yerevan); Gnuni, V. Ts. (Yerevan)

TITLE: Parametric oscillations of a flexible plate in high temperature fields

SOURCE: AN SSSR. Izvestiya. Mekhanika i mashinostroyeniye, no. 6, 1964, 117-119

TOPIC TAGS: flexible plate, high frequency vibration, temperature field, variational calculus, resonant state

ABSTRACT: Consider a flexible isotropic plate of thickness h in a Cartesian coordinate system. The rectangular plane of the plate is hinged around its perimeter and is subjected to a high-frequency longitudinal load

$$P_x = P\cos\Omega t$$

and temperature $T = T(z, t) = T(-z, t)$. The elasticity modulus E is assumed to be a function of the temperature. The equations of dynamic stability are obtained on the bases of the hypotheses that normal displacements are comparable to the plate thickness, that the plate normal does not deform, and that temperature changes in a differential element do not induce displacements. For an approximate solution,

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L 29541-65

ACCESSION NR: AP5005179

it is assumed that, during a principal parametric resonance period, the heated plate oscillates according to the law

$$f = C_{jk}\varphi_k(t)$$

where

$$\varphi_1 = \cos {}^1/_2\theta t \qquad \varphi_2 = \sin {}^1/_2\theta t .$$

Using the Galerkin-Bubnov variational principle, the result obtained is

$$C_{jk}^2 = \frac{1}{3}\left[\tau(t_j) + 2\gamma_1\frac{\pi}{\theta}\right]^{-1}\left[\theta^2 - \theta_{jk}^2(t_j) - 8\alpha\frac{\pi}{\theta}\right].$$

The case is considered where the changes in E are very large. This condition gives rise to a quasi-static problem in the temperature sense. A solution for C_{jk}^2 is also given for the conditions

$$E = E_0 - \varepsilon T, \quad T = B(\tau)t^2, \quad E = E_0 - \varepsilon_2 t^2, \quad \varepsilon_1 = \varepsilon B(\tau).$$

Orig. art. has: 24 equations.

ASSOCIATION: none

SUBMITTED: 12Jun64 ENCL: 00 SUB CODE: AS

NO REF SOV: 007 OTHER: 000

Card 2/2

[illegible] G. E.; G[illegible], [illegible].

Nonlinear problem of the stability of an anisotropic cylindrical shell. Izv. AN Arm. SSR. Ser.fiz.-mat.nauk 18 no.2:[illegible] '65. (MIRA 18:6)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR.

L 58805-65 EWT(d)/EWT(m)/EWP(w)/EWA(d)/EWP(v)/EWP(k)/EWA(h) Pf-4/Peb IW/EM

ACCESSION NR: AP5012163 UR/0022/65/018/001/0034/0042

AUTHOR: Gnuni, V. Ts.

TITLE: Contribution to the nonlinear theory of stability of orthotropic inhomogeneous small-slope shells

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 18, no. 1, 1965, 34-42

TOPIC TAGS: static stability, dynamic stability, flexible shell, orthotropic shell, sandwich structure, parametric vibration excitation

ABSTRACT: The article deals with the static and dynamic stability of an orthotropic inhomogeneous flexible shell arbitrarily supported along its contour and symmetrically inhomogeneous in thickness. The first-approximation for the dynamic stability of such a shell, derived by the author earlier (Izvestiya AN ArmSSR, seriya fiz.-mat. nauk v. 13, no. 1, 1960) is used to obtain the equation of static stability

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L 58805-65

ACCESSION NR: AP5012163

under certain assumptions. The stability of the non-trivial solutions can be verified by standard means. A hinge-supported orthotropic three-layer cylindrical shell is investigated by way of a numerical example. An equation is also derived for parametrically excited oscillations in such a shell and it is shown that resonant oscillations can be produced in it at frequencies below critical. Original article has: 38 formulas

ASSOCIATION: Institut matematiki i mekhaniki AN Armyanskoy SSR (Institute of Mathematics and Mechanics, AN ArmSSR)

SUBMITTED: 23Jun64 ENCL: 00 SUB CODE: AS

NR REF SOV: 008 OTHER: 001

Card 2/2 *dlp*

L 14634-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EWA(h)/ETC(m)-6 IJP(c)
ACC NR: AP6002674 WW/EM SOURCE CODE: UR/0252/65/041/004/0199/0203

AUTHOR: Bagdasaryan, G. Ye.; Gnuni, V. Ts.

ORG: Institute of Mathematics and Mechanics, Academy of Sciences, Armenian SSR (Institut matematiki i mekhaniki Akademii nauk Armyanskoy SSR)

TITLE: Oscillations of a cylindrical shell filled with a liquid of variable depth

SOURCE: AN ArmSSR. Doklady, v. 41, no. 4, 1965, 199-203

TOPIC TAGS: shell theory, cylindrical shell structure, shell structure dynamics, shell vibration

ABSTRACT: The paper presents a theoretical discussion of the oscillation of a circular cylindrical shell filled to a variable depth with an incompressible fluid. The mean surface of the thin shell serves as the coordinate plane and the shell is assumed to satisfy the hypothesis of nondeforming normals (V. Z. Vlasov, Obshchaya teoriya obolochek, Gostekhizdat, 1949). It is also assumed that the wave motion on the free surface of the liquid has only a slight effect on the oscillations of the shell. The calculation is based on shell oscillation and potential liquid motion equations which are transformed into a system of ordinary differential equations with variable coefficients by means of the Bubnov-Galerkin variation method. It is shown that under certain conditions the depth variation of the liquid may lead to a decrease or increase in the natural frequency of the shell. Orig. art. has: 17 formulas.

Card 1/2 [08]

L 14634-66
ACC NR: AP6002674

SUB CODE: 20/ SUBM DATE: none/ ORIG. REF: 003/ OTH REF: 001/ ATD PRESS: 4148

Card 2/2 BC

BAGDASARYAN, G. Ye.; GNUNI, V. TS.

Oscilliations of a cylindrical shell filled with a liquid of varying depth. Dokl. AN Arm. SSR 41 no. 4:199-203 '65
(MIRA 19:1)

1. Institut matematiki i mekhaniki AN Armyanskoy SSR.

L 23069-66 EWT(m)/EWP(w)/ETC(m)-6 IJP(c) WW/EM

ACC NR: AP6011330 SOURCE CODE: UR/0198/66/002/003/0021/0026

AUTHOR: Bagdasaryan, G. Ye. (Yerevan); Gnuni, V. Ts. (Yerevan)

ORG: Institute of Mathematics and Mechanics, AN ArmSSR (Institut matematiki i mekhaniki, AN ArmSSR)

TITLE: Parametric vibrations of a cylindrical shell filled with liquid of a variable depth

SOURCE: Prikladnaya mekhanika, v. 2, no. 3, 1966, 21-26

TOPIC TAGS: vibration theory, parametric vibration, parametric resonance, cylindrical shell vibration, shell liquid system

ABSTRACT: The problem of the parametric vibration of a circular cylindrical shell with constant wall thickness filled with incompressible liquid of variable depth is analyzed under the assumption that the shell is acted upon by longitudinal parametric force $P_0 + P_1 \cos\theta t$ and internal pressure q. A system of equations expressing the dynamic stability of a shell (equation for the deflection w and the stress function Φ) and the equation for the potential function ϕ of the disturbed liquid motion with certain boundary conditions are written, using the following simplifying assumptions: 1) the Kirchhoff-Love hypothesis on preservation of normals; 2) well known simplifications in the theory of shells with a large index of variation; 3) the motion of a liquid in a shell is potential; 4) the wave motion of the free surface of a liquid

Card 1/2

L 23069-66

ACC NR: AP6011330

has very little effect on the vibration of the shell. Assuming that the end of the shell is hinged, w and Φ are written in the form of finite trigonometric series with unknown functions $W_s(t)$ and $\Phi_s(t)$ ($t = 0, 1, \ldots, n$). It is shown that $\Phi_s(t)$ as well as all vibration characteristics can be expressed in terms of $W_s(t)$. A system of ordinary differential equations for determining the function $W_s(t)$ is derived from the equations of the dynamic stability of the shell, using the Bubnov-Galerkin variational method. The case $N = 0$ is investigated in more detail. Equations for determining the critical values of the parametric resonance of a shell filled with a liquid of variable depth are derived. Orig. art. has: 29 formulas. [LK]

SUB CODE: 20/ SUBM DATE: 26Apr65/ ORIG REF: 003/ OTH REF: 001/ ATD PRESS: 4234

Card 2/2

LAVRINENKO, V.T., red.; GNUSAREV, A.N., red.; SHIKHANOVICH, L.I., red.; ZHELNINA, N.A., red.izd-va; TERNOUSHKO, N.M., red.izd-va; SAVKINA, B.K., tekhred.

[Economy and organization of the socialist agriculture of Turkmenistan] Ekonomika i organizatsiia sotsialisticheskogo sel'skogo khoziaistva Turkmenistana. Ashkhabad, Turkmenskoe gos.izd-vo, 1958. 321 p. (MIRA 12:10)
(Turkmenistan--Agriculture)

GNUSAREV, V.F.

Automatic rolling of thread on studs. Stan.i instr. 31 no.8:38 Ag '60. (MIRA 13:8)
(Screw threads)

L 29935-66 EWT(m)/EWP(t)/ETI IJP(c) JD

ACC NR: AR6010650 SOURCE CODE: UR/0276/65/000/010/B070/B070

AUTHOR: Gnusin, N.P.; Nechayev, Ye. A.; Kutyukov, G. T.; Lavrova, T.A.

TITLE: Comparative evaluation of the existing methods of cadmium plating from non-cyanide solutions

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya, Abs. 10B440

REF SOURCE: Sb. dokl. k Novosib. nauchno-tekhn. konferentsii po mashinostr. Ch. 1. Novosibirsk, 1964, 129-134

TOPIC TAGS: metal plating, cadmium compound, electrolyte, ammonium salts

ABSTRACT: Results are given of studying basic electrolytes for cadmium plating and the technological parameters of their work are compared. It is noted that good results are obtained from complex ammoniate salts. The outlook for further improvement of electrolites based on amino compounds is stressed.

SUB CODE: 11,07/ SUBM DATE: none

Card 1/1

GRUZIN, N.P.; FOMENKO, N.P., FELLER, L.A.

Valve effect for a metal immersed in a solution of its salts in the presence of a chemical and concentration polarization. Izv. SO AN SSSR no.3 Ser. khim. nauk no.1:11-16 '64. (MIRA 18:3)

1. Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya Sibirskogo otdeleniya AN SSSR, Novosibirsk.

GNUSIN, N.P.; DOBROBNYY, N.P.; RULENKO, E.N.; FOMIN, A.G.

Current distribution on a cathode as a strip in a half-space of the electrolyte with a polarization curve expressed by the Tafel formula. Elektrokhimiia 1 no.4:452-459 Ap '65.
(MIRA 18:6)

1. Khimiko-metallurgicheskiy institut Sibirskogo otdeleniya AN SSSR.

BARTENEV, V.Ya.; VARENTSOV, V.K.; GNUSIN, N.P.

Cadmium pluting from a sulfate solution in the pracence of "sapul." Zashch.met. 1 no.6:709-712 N-D '65.

(MIRA 18:11)

1. Institut fiziko-khimicheskikh osnov pererabotki mineral'-nogo syr'ya Sibirskogo otdeleniya AN SSSR.

GNUSIN, N.P.

Conditions for modeling of electric fields in electrolyzers with conducting diaphragms. Elektrokhimiia 1 no.8:979-981 Ag '65. (MIRA 18:9)

1. Khimiko-metallurgicheskiy institut, Sibirskoye otdeleniye AN SSSR.

L 10844-66 EWT(m)/ETC/EWG(m) RM/DS

ACC NR: AP6000229 SOURCE CODE: UR/0289/65/000/002/0003/0008

AUTHOR: Gnusin, N. P.; Pevnitskaya, M. V.

ORG: Institute of Physicochemical Principles of the Processing of Mineral Raw Materials, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya Sibirskogo otdeleniya AN SSSR)

TITLE: Electrochemical properties of commercial cation-exchange membranes

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 2, 1965, 3-8

TOPIC TAGS: ion exchange membrane, electric conductance, cation

ABSTRACT: For a cation-exchange membrane containing one species of counterions and one species of cations, the transference number of the counterion can be expressed by the formula.

$$t_+ = \frac{\bar{u}_0 + t_+ u_0}{\bar{u}_0 + u_0} = \frac{1 + t_+ \frac{\bar{u}_0}{u_0}}{1 + \frac{\bar{u}_0}{u_0}}.$$

Card 1/2 UDC: 541.133

L 10844-66

ACC NR: AP6000229

where $\bar{\chi}_o$ is the conductance due to counterions adsorbed through exchange, $\bar{\chi}_c$ is the conductance due to the sorbed electrolyte, and t_+ is the transference number in the sorbed solution. This expression was checked on MK-40 membranes in $SuSO_4$, $CaCl_2$, and Na_2SO_4 solutions by measuring the transference numbers and conductance of the membranes as functions of the concentration of the external solution. The selectivity of the membranes was also determined. The calculated and experimental values of the transference numbers for dilute equilibrium solutions agreed within 1—4%. The discrepancy observed with increasing concentration of the external solution is explained by the increase in the concentration of the bound ions (due to a decrease in swelling) and by the effect of the sorbed electrolyte on the mobility of the ions absorbed as a result of the exchange. Orig. art. has: 4 figures, 2 tables, and 8 formulas.

SUB CODE: 07, 11 / SUBM DATE: 26Jun64 / ORIG REF: 002 / OTH REF: 007

Card 2/2 jw

L 10849-66 EWT(m)/ETC/EWG(m) RM/DS

ACC NR: AP6000230 SOURCE CODE: UR/0289/65/000/002/0009/0012

AUTHOR: Grebenyuk, V. D.; Gnusin, N. P.

ORG: Institute of Physicochemical Principles of the Processing of Mineral Raw Materials, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya Sibirskogo otdeleniya AN SSSR)

TITLE: Method of measuring the specific conductance of an ion exchanger in a granulated state

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 2, 1965, 9-12

TOPIC TAGS: electric conductivity, ion exchange membrane, ion exchange resin

ABSTRACT: The specific conductance is measured directly after the granulated ion exchanger has been separated from the equilibrium solution by centrifuging. The exchanger is placed in a cell (see Fig. 1) where equilibrium is allowed to take place; the cell is then centrifuged, thermostated, and its resistance is measured, and from the latter, the specific conductance of the ion exchanger is calculated. The method was checked on a ground ion-exchange membrane. The effect of the centrifuging rate on the cell resistance was determined. The method is recommended for application to resin membranes as well. The convenience of the thermostating of the cell makes this method applicable to studies of the change in the conductance of ion-exchange resins and membranes with changing temperature. Orig. art. has: 4 figures and 2 tables.

Card 1/2 UDC: 541.133

L 10849-66

ACC NR: AP6000230

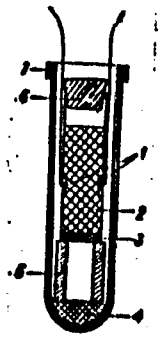


Fig. 1. Cell for determining the specific conductance of an ion exchanger.
1 - electrodes (Pt/Pt); 2 - ion exchanger; 3 - porous glass; 4 - cotton; 5 - rubber sleeve; 6 - cell stopper; 7 - centrifuge tube holder

SUB CODE: 11,20,14 SUBM DATE: 14Oct64 / ORIG REF: 003 / OTH REF: 012

HW

Card 2/2

L 10848-66 EWT(m)/ETC/EWG(m) DS/RM

ACC NR: AP6000231 SOURCE CODE: UR/0289/65/000/002/0013/0018

AUTHOR: Pevnitskaya, M. V.; Gnusin, N. P.; Lavrova, T. A.

ORG: Institute of Physicochemical Principles of the Processing of Mineral Raw Materials, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya Sibirskogo otdeleniya AN SSSR)

TITLE: Electric transport of ions through a cation-exchange membrane in mixed salt solutions

SOURCE: AN SSSR, Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 2, 1965, 13-18

TOPIC TAGS: ion exchange membrane, ion exchange resin, electric conductivity

ABSTRACT: The electrochemical behavior of the sulfonated cation-exchange membrane MK-20 was studied in the following mixed salt solutions: Na_2SO_4-$CuSO_4$, NaCl-$BaCl_2$, $NaNO_3$-$AgNO_3$. It was found that Ag^+, Ba^{++}, and Cu^{++} ions are selectively absorbed by the ion exchanger. In all of the systems studied, the preferentially absorbed ions have higher transference numbers in the membrane than sodium. These numbers are higher for ions the mobility of which in the ion exchanger remains higher. Thus, the specific permeability of membranes is determined both by the concentration of the particles in the ion exchanger and by their mobility in the resin phase. It is shown that from the dependence of the electrical conductivity of the membrane on the composition of the solution the ionic composition of the membrane can be calculated and

Card 1/2

UDC: 541.133

Card 2/2

L 10845-66 EWT(m)/ETC/EWG(m)/T/EWP(t)/EWP(b) RM/DS/JD
ACC NR: AP6000235 SOURCE CODE: UR/0289/65/000/002/0139/0141

AUTHOR: Gnusin, N. P.; Pevnitskaya, M. V.

ORG: Institute of Physicochemical Principles of the Processing of Mineral Raw Materials, Siberian Branch, AN SSSR, Novosibirsk (Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya Sibirskogo otdeleniya AN SSSR)

TITLE: Measurement of the resistance of ion-exchange membranes during electrolysis

SOURCE: AN SSSR. Sibirskoye otdeleniye. Izvestiya. Seriya khimicheskikh nauk, no. 2, 1965, 139-141

TOPIC TAGS: ion exchange membrane, electric resistance, electrolysis

ABSTRACT: A method is proposed for determining the resistance of ion-exchange membranes with both alternating and direct current. A description of the circuit used for simultaneously measuring the membrane potential and resistance of the membrane is given. The resistivity of ion-exchange membranes is calculated from the relation

$$\chi = \frac{d}{Z_q},$$

where χ is the conductivity ($ohm^{-1}\ cm^{-1}$);
d is the membrane thickness (cm);
q is the cross section of the membrane (cm^2)
Z is the resistance to alternating current (ohm).

UDC: 66.074.7-278

Card 1/2

L 10845-66

ACC NR: AP6000235

2

The dependence of the voltage drop at the membrane (V_4) on the density of the direct current is established by means of saturated calomel electrodes connected to a high-resistance tube millivoltmeter. As an example of the use of the technique, the authors cite the results of tests of a cation-exchange membrane made of KU-2 on polyethylene in a 0.1 N NaCl solution. The method permits not only the measurement of the resistance of ion-exchange membranes during electrolysis but can also serve for the determination of the limiting current at the membrane. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 07 / SUBM DATE: 26Jun64 / ORIG REF: 005 / OTH REF: 002

jw

Card 2/2

ACC NR: AP6029072 SOURCE CODE: UR/0413/66/000/014/0130/0130

INVENTOR: Gnusin, N. P.; Bartenev, V. Ya.; Varentsov, V. K.

ORG: None

TITLE: A method of electrolytic cadmium plating. Class 48, No. 184089 [announced by the Institute of Physicochemical Fundamentals for Conversion of Mineral Raw Materials, Siberian Department, Academy of Sciences SSSR (Institut fiziko-khimicheskikh osnov pererabotki mineral'nogo syr'ya Sibirskogo otdeleniya Akademii nauk SSSR)]

SOURCE: Izobret prom obraz tov zn, no. 14, 1966, 130

TOPIC TAGS: cadmium, electrolytic deposition, metal plating

ABSTRACT: This Author's Certificate introduces a method of electrolytic cadmium plating in an electrolyte based on cadmium sulfate and ammonium sulfate. This procedure results in high quality coatings with excellent adhesion to the base. NF disperser is added to the initial solution. This chemical is the product of condensation of a sodium salt of β-sulfonaphthalenedicarboxylic acid with formaldehyde. Plating is done in an electrolyte with the following ratio of components (in g/ℓ): cadmium sulfate--80; ammonium sulfate--300; NF disperser--35-50 m/ℓ. The process is done at a current density of 1.5 a/dm^2 and a pH of 4.5-5.0.

SUB CODE: 11, 07/ SUBM DATE: 02Mar65

Card 1/1 UDC: 621.357.7:669.738

NOVITSKIY, I.P. CHUKIN, N.I.; [illegible], A.E.

Automatic reading of polarization curves in the coordinates of a potential - current density logarithm. Zhur. fiz. khim. 39 no.8:2067-2068 Ag '65. (MIRA 18:9)

1. Institut fiziko-khimicheskikh osnov mineral'nogo syr'ya Sibirskogo otdeleniya AN SSSR.

GNUSIN, P.

Poultry farms serving several collective farms. Sel'. stroi. no.9:10-11 S '62. (MIRA 15:10)

1. Predsedatel' Yaroslavskogo oblastnogo mezhkolkhoznogo khozyaystvennogo stroitel'stva.

(Yaroslavl Province—Poultry houses and equipment)

IVYANSKIY, G.B., kand.tekhn.nauk; KASITSYNA, K.N., inzh.; GNUSKIN, A.M., inzh.; SKVORTSOVA, I.P., red.izd-va; MEDVEDEV, L.Ya., tekhn. red.; SHERSTNEVA, N.V., tekhn.red.

[Temporary instruction (I-12-59) and album of drawings of equipment and devices for assembling precast prestressed reinforced concrete construction elements] Vremennaia instruktsiia (I-12-59) i al'bom chertezhei oborudovaniia i prisposoblenii dlia montazha sbornykh zhelezobetonnykh predvaritel'no napriazhennykh konstruktsii. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1959. 136 p. (MIRA 13:3)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Laboratoriya montazha stroitel'nykh konstruktsiy Nauchno-issledov.instituta organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu (for Ivyanskiy, Gnuskin). (Building machinery)

IVYANSKIY, G., kand.tekhn.nauk; GNUSKIN, A., inzh.

Stands for assembling prestressed beams and girders. Stroitel' no.6:21-22 Je '59. (MIRA 12:9)
(Girders)

CHEKMAREV, Yakov Fedorovich, sostavitel'; BOGDANOV, I.K., uchitel' matematiki; MODEL', A.Ya., uchitel'; GNUSOV, N.V., uchitel'; PAVUK, T.I., uchitel'-nitsa; ZDRAVOMYSLOVA, N.K., uchitel'nitsa matematiki; BORISOV, S.A, uchitel' matematiki; KITAYGORODSKIY, P.I., uchitel' matematiki.

[Teaching mathematics in the schools for young workers] Iz opyta prepodavaniia matematiki v shkolakh rabochei molodezhi; sbornik statei. Moskva, Izd-vo Akademii pedagog. nauk RSFSR, 1952. 128 p. (MLRA 6:5)

1. Akademiya pedagogicheskikh nauk RSFSR, Institut metodov obucheniya. 2. Shkola rabochey molodyezhi No 52, Moskva (for Bogdanov). 3. Shkola rabochey molodyezhi No 31, Leningrad (for Model'). 4. Shkola rabochey molodyezhi No 4, Moskva (for Gnusov). 5. Shkola rabochey molodyezhi No 65, Moskva (for Pavuk). 6. Shkola rabochey molodyezhi No 71, Leningrad (for Zdravomyslova). 7. Shkola rabochey molodyezhi No 32, Moskva (for Borisov). 8. Shkola rabochey molodyezhi No 45, Moskva (for Kitaygorodskiy). (Mathematics--Study and teaching)

BOJANOWSKI, Witold, mgr inz.; GNUTEK, Jan, mgr inz.; ROSSINSKI, Boleslaw, doc. mgr inz.

Application of isotop method to density and moisture measurements of certain coarse-grained soils. Gosp wodna 24 no. 2:55-57 F '64.

1. Katedra Mechaniki Gruntow i Fundamentowania, Politechnika, Lodz.

GNUTENKO, Andrei Andreevich DECEASED 1964

MEDICAL 1920-1962

GAVRILO, Mariya Petrovna.

Influence of specific bacteria-(fuga) on abdominal typhoidic infection.

Dissertation for the degree of Doctor of Medical Science.
Chair of Microbiology, Saratov Medical Institute, 1947

GNUTENKO, M.P.

✓Ultrasonic effects on Schizosaccharomyces schizosporatus. M. P. Gnutenko, L. V. Shtromberger, and L. G. Gumilevskaya (State Univ., Saratov). *Mikrobiologiya* 19, 330–8(1950).—Irradiation of *S. schizosporatus* 0.3 min. at 800 kc./sec. killed 46.5% of the cells, and weakened the deacidifying activity of surviving cells, but caused little loss in fermentation capacity. In 0.5 min. at 1 Mc./sec. only 1.32% of the cells survived, and were seriously weakened in all metabolic activities. In 4 min. at 2 Mc./sec. 23% of the cells survived; in 0.5 min., only 0.002%, and these had impaired activity. Julian P. Tullis

COUNTRY : USSR
CATEGORY :
ABS. JOUR. : RZhBiol., No. 3 1959, No. 10114
AUTHOR : Gautenko, M. P., Papkova, L. A., Nadezhko, Z. A.*
INST. : ---
TITLE : Pigment-Forming Schizosaccharomyces Acidodevoratus and Measures for Controlling Them
ORIG. PUB. : Mikrobiologiya, 1957, 26, No 3, 353-359
ABSTRACT : * Demchuk, A. L., Yegorova, S. I.

The authors isolated 3 strains of dividing yeasts (from apple and cherry juice at the Simferopol' Winery and from apple juice at the Saratov Winery). In its morphologic and biochemical properties these yeasts resemble Schizosaccharomyces acidodevorates Chalenko, differing only in the formation of an olive-colored pigment. It was shown that the quantitative ratios of dividing and ellipsoid yeasts have an influence

Card: 1/3

COUNTRY :
CATEGORY :

ABS. JOUR. : MZhBiol., No. 1959, No. 10114

AUTHOR :
INST. :
TITLE :

ORIG. PUB. :

ABSTRACT : on the decrease in acidity in the fruit juices. No decrease occurs only when they are present in a ratio 1:10: therefore, the quantitative predominance of commercial yeasts should be very great. The decrease in acidity is produced by the utilization of malic acid in the presence of sugar. With the aim of controlling the dividing yeasts it is recommended that the vessel be treated with chlorine (10 milligrams of active chlorine per liter of water for 20 minutes) and that the fruits also be treated with chlorine (5-10

Card: 2/3

GNUTENKO, M.P.; MACHULINA, N.A.

Selecting active races of lactic acid bacteria for the ensilage of corn. Uch. zap. Sar. un. 64:127-130 '59. (MIRA 13:9)
(Lactic acid bacteria) (Ensilage) (Corn (Maize))

GNUTENKO, M.P.; SIZOVA, N.A.

Species characteristics and antibiotic properties of streptococci isolated from watermelons. Mikrobiologiia 32 no.4:636-641 Jl-Ag '63. (MIRA 17:6)

1. Saratovskiy universitet.

GAMALEYA, N.F.; SIROTA, T.A.

Development of control measures against the causative agent of toxic bacteriosis of watermelons. Nauch. dokl. vys. shkoly; biol. nauki no.1:178-182 '65. (MIRA 18:2)

1. Rekomendovana kafedroy fiziologii rasteniy i mikrobiologii Saratovskogo gosudarstvennogo universiteta.

Metallurgical Abst.
June 1954
Electrodeposition

Electrodeposition of Black Nickel. N. P. Fedotev, P. M. Vyacheslavov, and N. P. Grilikh. (*Zhur. Prikl. Khim.*, 1952, 25, (3), 322–324 (in Russian)); *J. Appl. Chem. U.S.S.R.*, 1952, 25, (3), 331–334 (in English)).—The bath used contained (g./l.): $NiSO_4.7H_2O$ 75, $NiSO_4.(NH_4)_2SO_4.6H_2O$ 45, $ZnSO_4.7H_2O$ 40, NH_4CNS 15, H_3BO_3 25. Increasing the c.d. (D_k) gave darker deposits, but with high D_k the deposit was "scorched", i.e. was powdury. However, by raising the temp., the range of D_k at which black Ni deposited was also raised. At temp. of 50° C. and above, the deposits produced at low D_k (0·02–0·36 amp./dm.²) were grey. The transition from grey to black Ni was discontinuous, as was shown by the cathode polarization curve. Analysis of a grey deposit obtained at 50° C. with D_k 0·05 amp./dm.², current efficiency (η) 5%, showed that the ratio of Ni : Ni + Zn was 86%, compared with 31% for a black deposit obtained at 50° C., 0·70 amp./dm.², and η = 19%. To ensure good adherence, it is recommended that deposition should begin at D_k = 0·02–0·05 amp./dm.² to give a dense deposit of grey Ni (preferably on a previous deposit of ordinary Ni); then D_k should be gradually increased to the value necessary for black Ni (1·3 amp./dm.²). The *p*H should be 4·5–5·5. The bath has a good throwing power.—G. V. E. T.

1. GNUSIN, N. P.; KHAD'MASH, G. G.; KADANER, L. I.

2. USSR (600)

4. Metals

7. Criterion of the uniformity of metal distribution on the cathode. Zhur. prikl. khim. 25, No. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

On L. I. Kadaner's Proposed Criteria for Uniform Cathodic Distribution of Metals. N. P. Ignatin and G. J. Khaĭmaĭ (*Zhur. Priklad. Khim.*, 1952, 25, (10), 1114–1117 (in Russian); *J. Appl. Chem. U.S.S.R.*, 1952, 25, (10), 1177–1179 (in English).—A criticism of the work of K. (*ibid.*, 1951, 24, 1039; preceding abstract). MJM, cannot be equivalent to $m\frac{dm}{dl}$, both on dimensional grounds and on consideration of the case in which the current efficiency is independent of d/l. Many of the expressions which K. derived are incorrect, owing to the wrong sign being introduced during differentiation, but apart from this K.'s method for obtaining the relation between D and l is needlessly complex. Although K. criticizes the errors of Haring and Blum (*Trans. Amer. Electrochem. Soc.*, 1923, 44, 313; see *J. Inst. Metals* (Abstracts), 1933, 29, 743), he himself repeats them in his work.—G. V. E. T.

Gnusin, N.P.

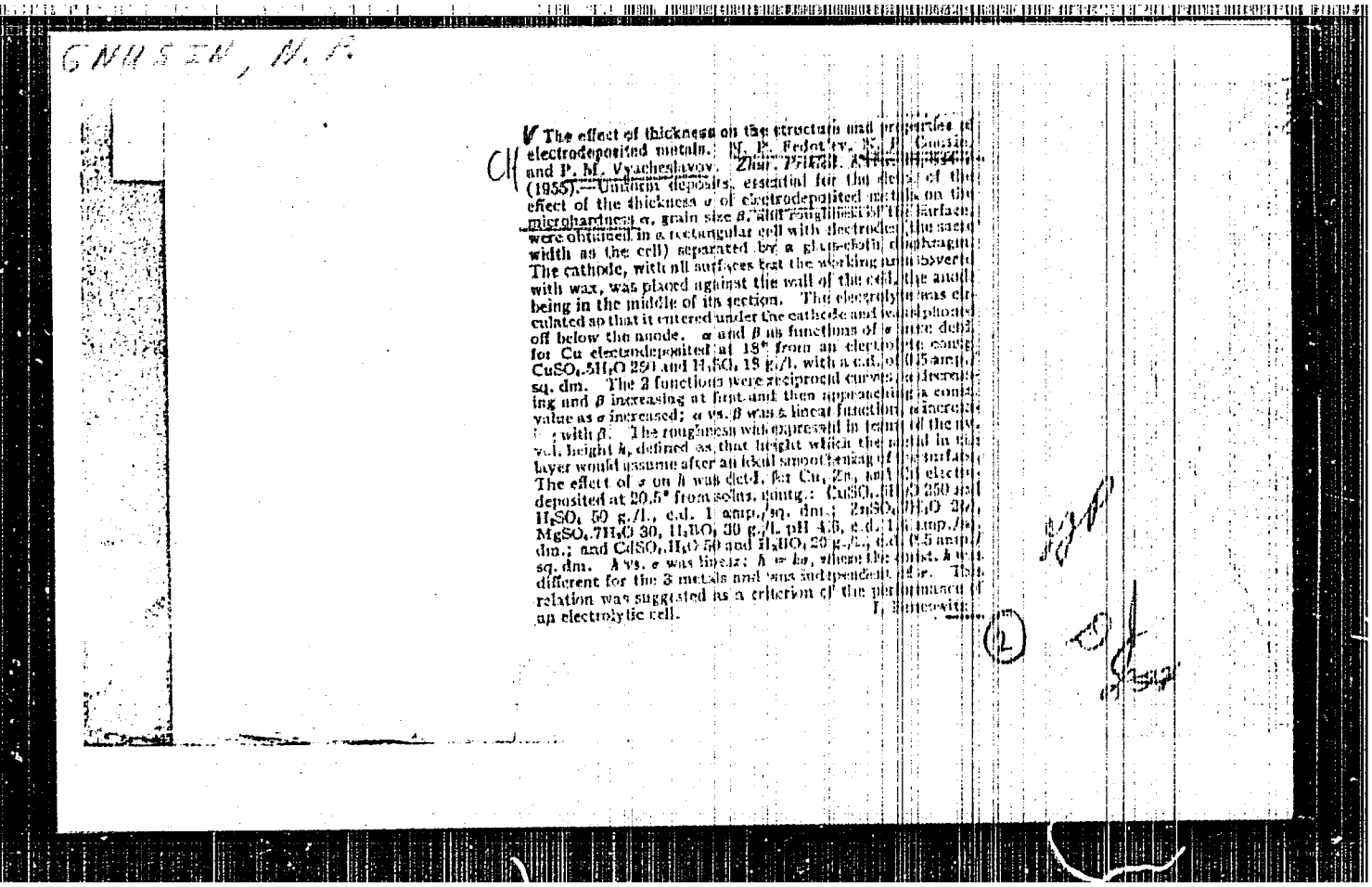
Gnusin, N.P. --"Study of the Structure of Electrodeposition of Metals" Cand Chem Sci, Leningrad Technological Inst, Leningrad 1953. (REFERATIVNYY ZHURNAL--KHIMIYA No 1, Jan 54)

Source: SUM 168, 22 July 1954

KADANER, L.I.; GNUSIN, N.P.; KHAD,'MASH, G.G.

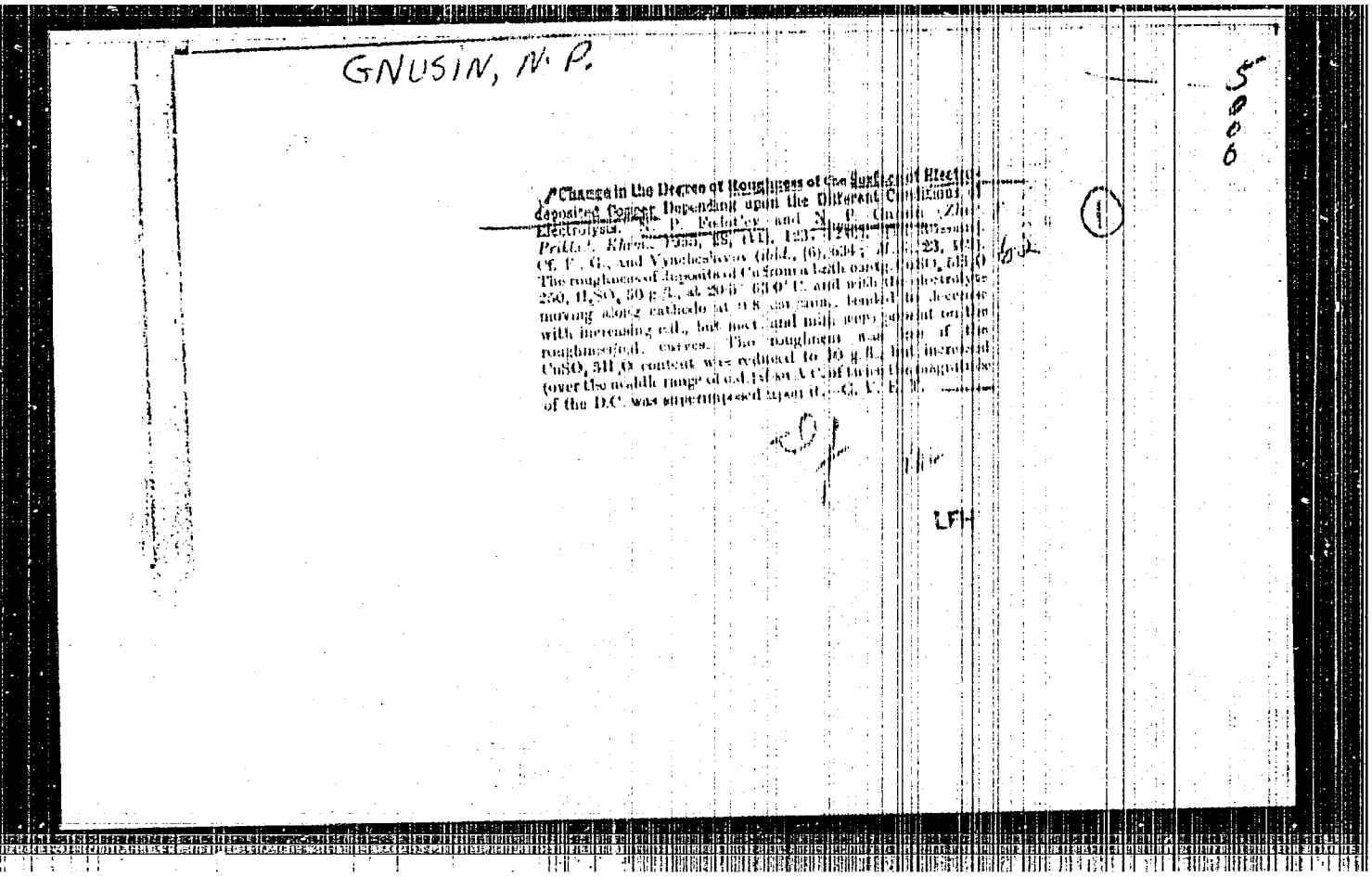
Again on the criterion of the uniformity of distribution of metal on a cathode. Zhur.prikl.khim. 26 no.7:770-774 Jl '53. (MLRA 6:7)
(Electroplating) (Gnusin, N.P.) (Khad'mash, G.G.)

Some Assumptions Made in the Solution of Problems Concerning Throwing Power. N. P. Gnusin and G. J. Khad'ieva (*Zhur. Prikład. Khim.*, 1934, 7, [illegible]). — In Russian. The most important assumption of Haring and Blum (*J. Amer. Electrochem. Soc.*, 1923, 44, 313; see *J. Ind. Metals* (Abstracts), 1923, 29, 743)—that the c.d. vector at const. distance from the lines of current in the elect. field of the electrolytic cell is true only for rectangular baths with two opposite walls as electrodes, but in this case H. and B.'s expression, $I_n/I_f = K\left(1 - \frac{e_n - e_f}{E_f}\right)$, for the "secondary" current distribution is meaningless. This expression merely gives the ratio between the currents in a rectangular bath when the cathode is changed from position *n* to position *f*. The formulæ of Sukhodsky (*Korroziya i bor'ba s nei*, 1935, 1, 10), Vagramyan ("Electrodeposition of Metals", 1950), Frumkin (*et al.* "Kinetics of Electrode Processes", 1952), and Levitsky ("Chromium Plating of Machine Parts and Instruments", 1951), can all be derived from that of H. and B., and are therefore open to criticism. From all these formulæ it would follow that the current distribution would be more uniform, the greater the sp. elect. conductivity, the greater the polarizability of anode and cathode, and the greater the distance between the electrodes; not all of these conditions are in agreement with the experimental evidence.—G. V. E. T.



GNUSIN, N. P.

The effect of thickness on the structure and properties of electrodeposited metals. N. P. Fedot'ev, N. I. Gnusin, and P. M. Vyacheslavov. Zhur. Prikladnoi Khim. 28, 1154-61 (1955).—Uniform deposits, essential for the determination of the effect of the thickness σ of electrodeposited metals on the microhardness α, grain size β, and roughness of the surface were obtained in a rectangular cell with electrodes (the same width as the cell) separated by a glass-cloth diaphragm. The cathode, with all surfaces but the working one covered with wax, was placed against the wall of the cell, the anode being in the middle of its section. The electrolyte was circulated so that it entered under the cathode and was withdrawn off below the anode. α and β as functions of σ were determined for Cu electrodeposited at 18° from an electrolyte containing $CuSO_4.5H_2O$ 291 and H_2SO_4 18 g./l. with a c.d. of 0.5 amp./sq. dm. The 2 functions were reciprocal curves, α decreasing and β increasing at first and then approaching a constant value as σ increased; α vs. β was a linear function. α increases with β. The roughness was expressed in terms of the actual height h, defined as that height which the metal in the layer would assume after an ideal smoothening of the surface. The effect of σ on h was detd. for Cu, Zn, and Cd electrodeposited at 20.5° from solns. contg.: $CuSO_4.5H_2O$ 250 and H_2SO_4 50 g./l., c.d. 1 amp./sq. dm.; $ZnSO_4.7H_2O$ 250, $MgSO_4.7H_2O$ 30, H_3BO_3 30 g./l., pH 4.6, c.d. 1 amp./sq. dm.; and $CdSO_4.H_2O$ 50 and H_3BO_3 20 g./l., c.d. 0.5 amp./sq. dm. h vs. σ was linear; $h = k\sigma$, where the const. k was different for the 3 metals and was independent of σ. This relation was suggested as a criterion of the performance of an electrolytic cell.



GNUSIN, N. P.

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(1)

LFH

GNEISIN, N. P.

Theory of electrochemical analogy. N. P. Gneisin. *Trudy Leningrad. Tekhnol. Inst. im. Lensoveta* 33, 111-20 (1956).—The theoretical prerequisites for the soln. of electrochem. modeling problems were discussed. Analytical and graphical methods for the appraisal of the possibility of modeling were proposed, as was the method for selecting the coeff. of similarity. The relation between the voltages of similar baths was established. E. M. Elkin

GNUSIN, N.P.

4 08

The influence of the angle of inclination of the lines of current to the cathode on the structure of the metallic deposit. N. P. Gnusin. *Trudy Leningrad. Tekhnol. Inst. im. Lensoveta* 33, 21-8(1955).—The angle of inclination, α, of the lines of current to a flat electrode in the case of a flat field was expressed by the equation $\tan \alpha = D_K \rho / (d\eta/dD_K) \cdot (dD_K/dl)$, where ρ = the sp. resistance of the electrolyte, D_K the vector of c.d. normal to the electrode surface, η = the value of polarization, and, hence, $d\eta/dD_K$ = the polarizability of the electrode and dD_K/dl = the degree of c.d. along the cathode. The equation led to the rule that the inclination between the lines of current and the electrode surface took place always in the direction of increasing c.d. Expts. showed that for massive deposits of Cu and Ni from acid baths, the direction of the lines of current in the electrolyte had no influence on the direction of the predominant growth of crystallites.

E. M. Emin

Gnusin, N.P.

The deformation of metals on measuring the potential. Study by N. P. Fedot'ev, N. P. Gnusin, and A. F. Luzan. *Trudy Leningrad. Tekhnol. Inst. im. Lensoveta* 38, 250-6(1955).—Preliminary expts. indicated that the deformation of Al, Cu, and Ni electrodes in a 1% Na_2SO_4 soln., taking place on varying the potential, were connected with but not entirely explained by electrocapillary phenomena. R. M.

76-32-3-29/43

AUTHOR: Gnusin, N. P.

TITLE: Methods and Techniques of Physicochemical Investigations (Metody i tekhnika fiziko-khimicheskogo issledovaniya). A New Method for Measuring the Polarization Capacity and the Polarization Resistance of Double Layers (Novyy sposob izmereniya polyarizatsionnoy yemkosti i polyarizatsionnogo soprotivleniya dvoynogo sloya)

PERIODICAL: Zhurnal Fizicheskoy Khimii, 1958, Vol 32, Nr 3, pp 689-691 (USSR)

ABSTRACT: The kind of determination most used at present is the bridge scheme first applied by Krüger (reference 1) and considerably improved by a number of Soviet scientists. This scheme, however, has serious principal deficiencies; on the other hand electrochemical systems which are worked with in practice were not investigated. In contrast to the other modifications of the bridge scheme a method of separate measurements is worked out in the present paper. This method consists of the formation of a resistance triangle that connect the double-layer resistance and the

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reference resistance one after the other with the circuit. From a schematic representation follows that the test cell consists of a tank with two opposite surfaces as electrodes, where to one electrode the end of a capillary tube with a platinum wire is held, and where the system is accordingly connected with a reference resistance. The latter may serve as an active or inductive or as an active-inductive resistance. The calculation of the obtained results was in the present case performed graphically by means of the resistance triangle, while the quantities of the nonreactive resistance and the capacity were calculated according to formulae. It is said to be an advantage of this method that neither the nonreactive resistance of the electrolyte nor the resistance of the double layer of the second electrode come into the final value, where the use of a third auxiliary electrode is unnecessary and measurements can be performed in an unlimited domain of capacity and

Methods and Techniques of Physicochemical Investigations. A New Method for Measuring the Polarization Capacity and the Polarization Resistance of Double Layers

76-32-3-29/43

resistance. There are 4 figures and 8 references, 4 of which are Soviet.

ASSOCIATION: Institut inzhenerov transporta, Minsk (Minsk, Institute of Transportation Engineers)

SUBMITTED: December 19, 1956

Card 3/3

76-32-5-6/47

AUTHORS: Gnusin, N. P., Zrazhevskiy, G. N.

TITLE: Primary Current Determination in a Slit Bath (Pervichnoye raspredeleniye toka v shchelevoy vanne)

PERIODICAL: Zhurnal fizicheskoy khimii, 1958, Vol. 32, Nr 5, pp. 1003-1007 (USSR)

ABSTRACT: In many cases the primary current is determined directly by experiments, while the present paper gives a possibility of theoretical determination for the case mentioned in the title. The mentioned cell consists of a rectangular vessel in which one wall serves as cathode and the anode is a slit between two opposite fins. The authors start from the assumption of an infinitely long linear electrode located between two parallel infinite flat electrodes. In the deduction of the mathematical equations the method of reflected image representation is used and it is assumed that the currents flowing from each linear electrode are equal as regards their sign and quantity. Graphical representations of the current distribution in the cell in dependence on the dimensional ratio are given as well as the function of the maximum current density D_{max} on the minimum

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Primary Current Determination in a Slit Bath 76-32-5-6/47

current density D_{min}. The equation $T = \frac{1}{4} e^{\pi l/2h}$ deduced from the expression for the unequal current distribution on the electrode $T = \frac{D_{max}}{D_{min}}$ is given as calculation formula for the cells with a length to width ratio < 0.5.
There are 3 figures and 3 references, 1 of which is Soviet.

ASSOCIATION: Belorusskiy institut inzhenerov zheleznodorozhnogo transporta Gomel' Belorussian Institute for Railroad Transportation Engineers, Gomel'

SUBMITTED: October 25, 1956

1. Electrolytic cells--Circuits 2. Electric currents--Determination 3. Mathematics applications

Card 2/2